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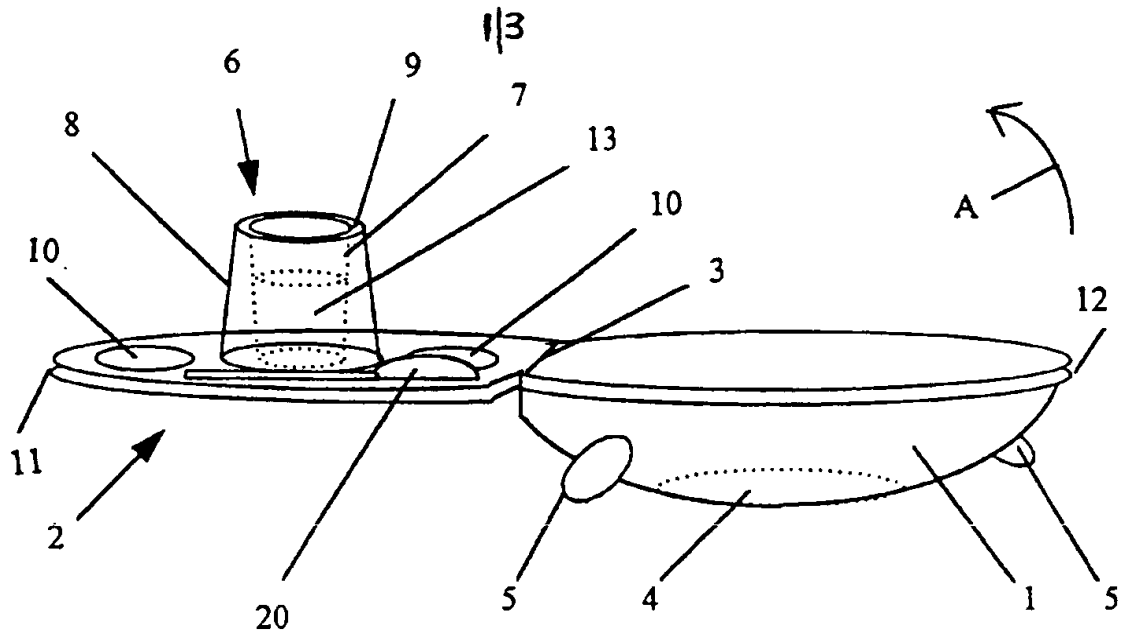


Figure 1

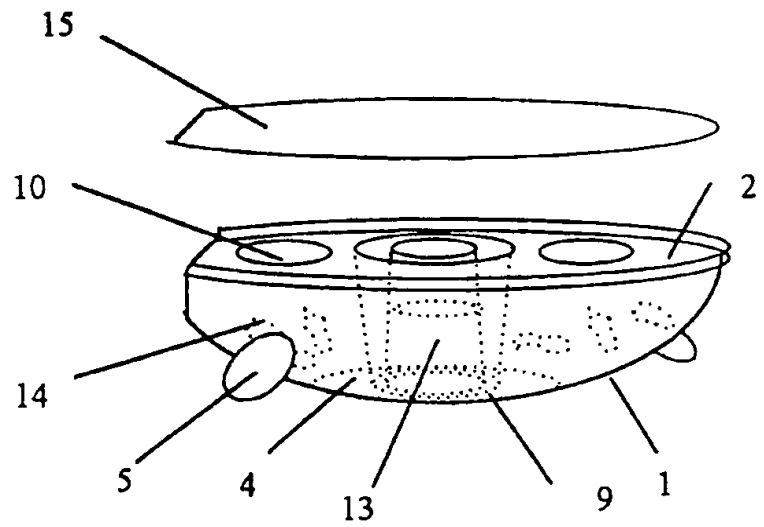


Figure 2

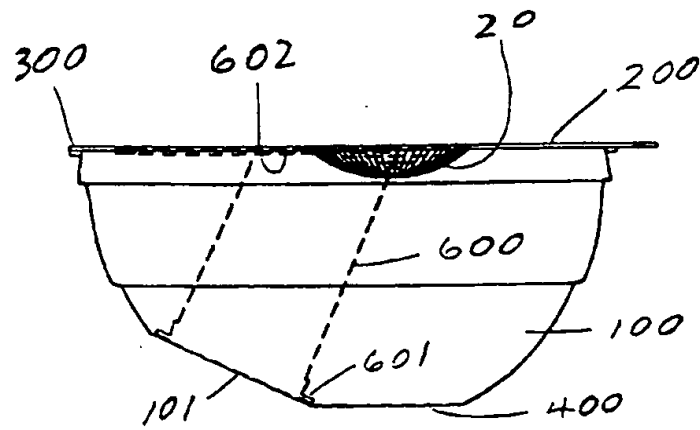


FIG 3

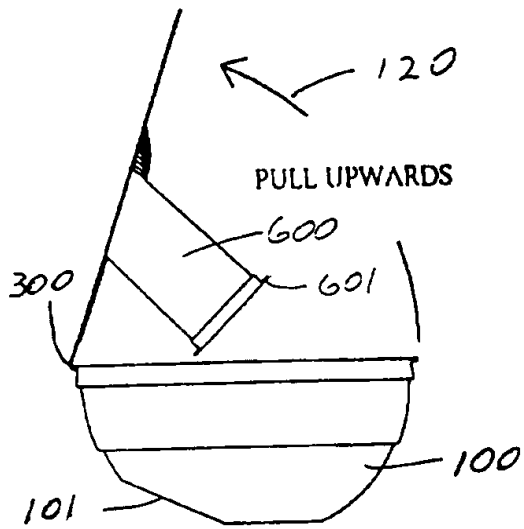


FIG 5 (a)

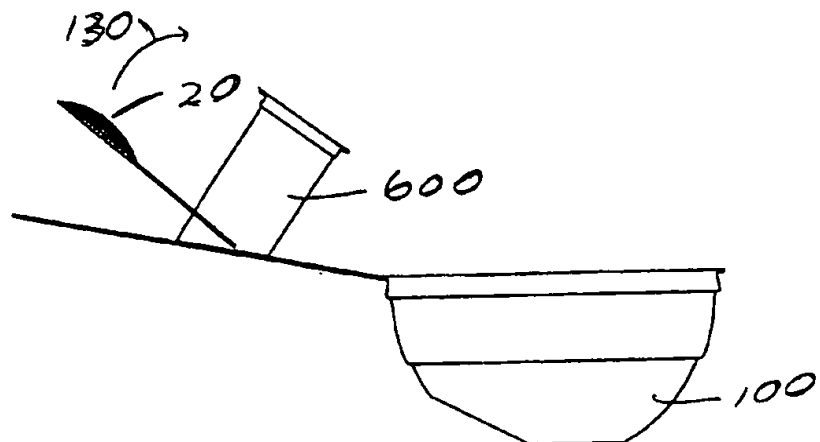


FIG 5 (b)

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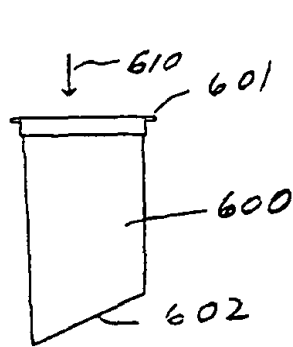


FIG 4 (a)

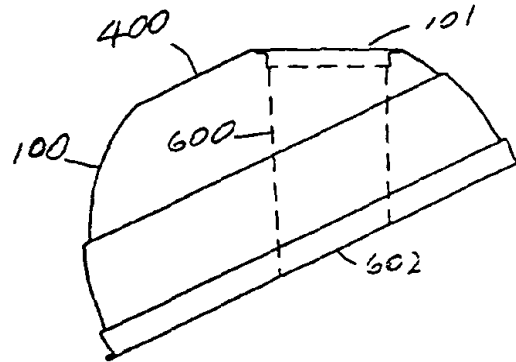


FIG 4 (b)

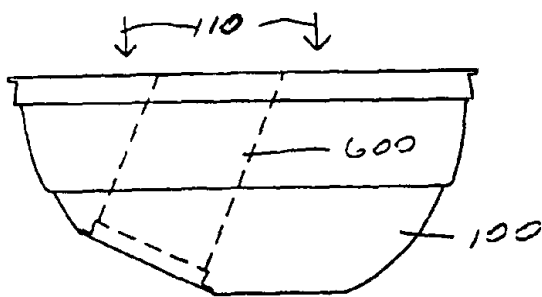


FIG 4 (c)

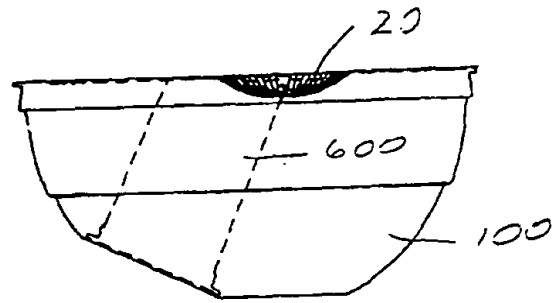


FIG 4 (d)

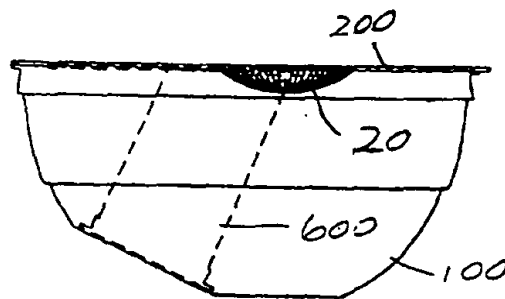


FIG 4 (e)

CONTAINER FOR FOOD

This invention relates to a container for food, a food package and to a method of providing a food package.

5

Disposable containers for food are known for snack foods, in-flight, hospital and picnic meals and the like. In particular, containers for such foods as yoghurt, fromage frais or pot noodles are well known, in which, customarily, the food is eaten directly from the container so that the packaging is not disposed of until the snack or meal is finished. Such containers may have more than one compartment for different foods to be eaten together, such as yoghurt and fruit.

15

Known containers are not convenient, however, for packaging ingredients which are to be kept separate until use but are to be mixed before consumption, such as, for example breakfast cereal and milk. The only known way to package such ingredients is to package them separately in linked packages, which in use are separated and each individually opened so that the contents of each may be poured into a separate bowl. In this case the packaging is superfluous, and needs to be disposed of, once the ingredients are served in the bowl.

25

According to a first aspect of the present invention there is provided a container for food including a first portion for containing a first ingredient, a second tubular portion for containing a second ingredient, and closure means, a first end of said second portion being fixedly secured to and closed by said closure means, an opposing second end of said second portion being frangibly connected to and closed by said first portion whereby on opening the closure means the frangible connection is broken and the first ingredient exits the

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second end of the second portion to mix with the second ingredient.

Conveniently the first portion is adapted to contain a
5 dried food and the second portion is adapted to contain a liquid.

Advantageously, the first portion is adapted to hold a
dried food such as breakfast cereal and the second por-
10 tion is adapted to hold milk.

Preferably, the closure means is a lid hinged to the first portion.

15 Preferably the container additionally comprises at least one item of cutlery.

Advantageously, the at least one item of cutlery is housed in a cutlery housing within the container.
20

According to a feature of this invention there is provided food package including a first container which is bowl-shaped, a second container located within the first container and closure means for the first container,
25 wherein the second container is fixedly secured to the closure means and releasably frangibly attached to an inner wall of the first container, whereby on opening the closure means the second container separates from the inner wall of the first container and contents of the
30 second container mix with contents of the first container.

Preferably, the frangible attachment is to a lower portion of a side wall or to a base of the first
35 container.

In one embodiment, the closure means has apertures therein sealable by foil means.

Advantageously, the closure means is a lid which is
5 heat sealed to a rim of the first container and hingedly secured to the first container.

Conveniently, the food package further includes at least one item of cutlery, e.g. a spoon, housed in a portion of the closure means.
10

Preferably, the second container is frusto-conically shaped, being upright when the closure is closed.

15 Conveniently, the second container is frusto-conically shaped, or is a truncated cylinder.

In one embodiment, the second container is an inner truncated cone having a base remote from the closure means connected by an annulus at the base of the inner cone to an outer truncated cone having a base joined to the closure means.
20

In another embodiment, an end of the second container
25 which is frangibly secured to the base of the first container has a radially outwardly extending flange which is heat sealed to the inside of the first container to facilitate said frangible attachment and to enable easy pouring of the contents of the second container into the
30 first container.

According to a second aspect of the present invention, there is provided a method of providing a food package, including the steps of:

- 35 a) providing a first container having a hinged lid and with a second container fixedly secured inside said lid,

- b) opening said lid to invert said second container,
- c) at least partially filling said second container, through an opening in a base thereof, with liquid,
- d) closing said first container onto said lid so that
5 an inside wall of a base of said first container contacts and closes said opening in the base of the second container,
- e) sealing the lid to said first container and said
10 inside wall of the base of said first container to said base of the second container, thereby sealing said liquid in said second container,
- f) inverting the combination formed at step (e) and at least partially filling the first container with dried food through apertures in said lid, and
- 15 g) closing said apertures with foil means, whereby in use the seal between the lid and the first container is broken and in opening the lid the seal between the second container and the base of the first container is broken, thereby enabling
20 the liquid in said second container to mix with the dried food in said first container.

According to a preferred embodiment, there is provided
a food package including the steps of:

- 25 a) providing a first container having a sealed end and an open end,
- b) at least partially filling the first container with a fluid,
- c) providing an inverted second container having a
30 closed end and an open end,
- d) frangibly sealing the open end of the first container to an inner portion of the second container, thereby sealing the liquid within the first container,
- 35 e) inverting the second container and at least partially filling the second container with an ingredient,

f) sealing an at least partially removable closure means to the opening of the second container and fixedly securing the base of the first container to the closure means whereby, in use, the closure means may be opened and upon opening the closure means the frangible connection between the first container and the second container is broken so that the fluid from the first container may flow into the ingredient of the first container.

10

Preferably, an item of cutlery is releasably secured to the base of the first container prior to attachment of the closure means.

15

The invention will now be described by way of example with reference to the accompanying drawing, in which:

Figure 1 shows a perspective view of a container according to one embodiment of this invention with the lid open and an inner container partially filled with milk; and

20

Figure 2 shows the container of Figure 1, with the lid closed and the outer container additionally partially filled with breakfast cereal.

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Figure 3 shows a side view of a second embodiment of this invention,

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Figures 4(a), 4(b), 4(c), 4(d) and 4(e) show steps in filling the container of the second embodiment, and

Figures 5(a) and 5(b) show steps in opening the container of the second embodiment.

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In the Figures, like reference numerals denote like parts.

A first embodiment of the container is shown in Figure 1, in which the container has an outer bowl 1 having a lid 2 connected to the bowl 1 by a hinge 3. The bowl has a substantially planar base 4 and three stabilising feet 5 equiangularly disposed about the bowl. The lid 2 is provided with an inner container 6, extending from an inner surface of the lid 2. The inner container 6 is formed by an inner truncated conical member 7 having a base open at the end remote from the lid 2 and an outer supporting truncated conical member 8 having its base fixedly joined to the lid 2 and its truncated apex joined to the open end of the cylinder 6 by an annulus 9. The lid 2 has apertures 10 in its planar surface and is provided with a circumferential lip 11 to form a seal, when the lid is closed, with a co-operating lip 12 around the circumference of the bowl 1.

To charge the container, the lid 2 is held open with the open base of the inner container uppermost. The inner container 6 is at least partially filled with milk 13 through the open base. The bowl 1 is closed onto the lid in the direction of arrow-headed line A, so that an inside wall of the base 4 of the bowl 1 contacts and closes the open base of the inner container 6. The lid 2 is sealed to the bowl by the co-operating lips 11 and 12 on the lid 2 and bowl 1 respectively. The annulus 9 on the inner container is releasably sealed to the base 4 of the bowl 1 by passing a first heating or ultrasonic welding tool between the outer cone 8 and the inner cone 7 to engage the annulus 9, to co-operate with a second tool positioned on the outside of the base 4 of the bowl 1 and aligned with the first tool; the milk 13 is thus sealed in the inner container.

The seal between the inner container 6 and the base 4 of the outer container 1 is not as strong as the connection of the inner container 6 to the lid 2.

The sealed bowl is inverted to an upright position, as shown in Figure 2, and the bowl 1 partially filled with cereal 14 through the apertures 10 in the lid.

- 5 The apertures are closed with foil 15 which is fixed to and covers the lid 1 by means known per se.

- 10 In use the seal between the lid 2 and bowl 1 is broken and in opening the lid 1 the seal between the inner container 6 and the base 4 of the bowl 1 is broken, thereby enabling the milk 13 in the inner container 6 to mix with the cereal 14 in the bowl 1.

- 15 In a currently preferred embodiment a spoon 20 may be located in a housing within the container. Such a housing may be provided by releasable attachment to the inner container 6 such that a spoon may be housed in a slot in the inner container 6 or to an underside of the lid 2.

- 20 A second embodiment of the container is shown in Figure 3 in which an outer bowl 100 has a stepped side wall for strength, a lower portion of the side wall having a planar portion 101 adjacent to a base 400 of the bowl. Although not shown in Figures 3 - 5b, the container may
25 have three, four, or more feet. The portion 101 is frangibly sealed by heat sealing to an outwardly extending flange 601 of a truncated cylindrical inner container 600. The flanged end of the inner container 600 is normally open and is closed in the configuration
30 shown in Figure 3 by the portion 101. The upper, truncated end of the inner container 600 has a base 602 closing the container 600. A lid 200 is frangibly sealed by heat sealing to a rim of the bowl 100 and the lid has a hinge 300. The area in which the base of the inner
35 container has contact with the lid is fixedly attached, for example by PP fusing, to the lid. Prior to securing the lid a spoon 20 is releasably attached, e.g. clipped,

to the base 602 of the inner container 600, although the spoon may simply be placed without attachment in the bowl 100. The concave part of the spoon may be used to house sugar, e.g. confined in the spoon by a tear-off film
5 across the rim of the spoon.

To fill the container 100, the inner container is at least partially filled with fluid, for example milk, as shown by the arrow headed line 610 in Figure 4(a). The
10 bowl 100 is inverted and the flange 601 is heat sealed to the portion 101, thereby sealing the fluid into the inner container 600.

The container 100 is then inverted and at least
15 partially filled with an ingredient, for example a dried food such as a cereal, as shown by the arrow headed lines 110 in Figure 4(c). An item of cutlery such as the spoon 20 is positioned into the base 602 of the container 600, as shown in Figure 4(d).

20 As shown in Figure 4(e), the lid 200 is heat sealed to the rim of the bowl 100 and PP fused to the truncated base 602 of the inner container 600.

25 The fluid is thus contained within the inner container 600 and separated from the ingredient that is located within the bowl 100.

So as to open the container, the lid is pulled
30 upwardly, as shown by the arrow headed line 120, in Figure 5(a), so that the lid generally detaches from the rim of the bowl 100 that is retained on the bowl by the hinge 300. The action of opening the lid causes the frangible connection at the flange 601 of the inner
35 container 600 to detach from the portion 101 of the bowl 100 so that the fluid exits the container 600 into the bowl 100, i.e. the fluid and ingredient mix. By

arranging the portion 101 to face opposite the direction of opening the lid 200, assistance is given in the frangible seal breaking more easily than the fixed attachment of the inner container base to the lid, and in
5 preventing spillage of fluid upon breaking the frangible seal, and also allows a smoother opening action with reduced jerking.

Once the lid is fully opened the spoon is revealed and
10 is removed, for example by sliding and pulling in the direction of arrow headed line 130 from the container 600.

It will, therefore, be understood that the seal between
15 the inner container 600 and the lid is stronger than the seal between the base of the inner container and the bowl 100 and the seal between the bowl rim and the lid.

In a currently preferred embodiment, the angle
20 subtended by the portion 101 to the base 400 is approximately 25 degrees, the diameter of the flange 601 is approximately 42mm, the diameter of the inner container is approximately 36mm, the rim diameter of the bowl is approximately 135mm, the bowl has a depth of
25 approximately 63mm.

A suitable material from which the container may be moulded is polystyrene which may have a thickness of 0.6 mm. The bowl may be made of transparent material so
30 that the contents are displayed.

Although the container has been described in relation to milk and cereal it will be understood that the invention has application to other foods and also to non-
35 foods. Moreover, the container can be made of microwave-proof and heat resistant material so that the contents may be heated in a microwave or conventional oven, or by

other known methods, or be freezer proof since products within the bowl and inner container may require freezing prior to use.

- 5 By positioning the fluid inner container low in the bowl, the container of this invention has a low centre of gravity so that it is stable.

CLAIMS:

1. A container for food including a first portion for
containing a first ingredient, a second tubular portion
5 for containing a second ingredient, and closure means, a
first end of said second portion being fixedly secured to
and closed by said closure means, an opposing second end
of said second portion being frangibly connected to and
closed by said first portion whereby on opening the
10 closure means the frangible connection is broken and the
first ingredient exits the second end of the second
portion to mix with the second ingredient.
2. A container as claimed in claim 1, wherein the
15 first portion is adapted to contain a dried food and the
second portion is adapted to contain a liquid.
3. A container as claimed in claim 2, wherein the
first portion is adapted to hold a dried food such as
20 breakfast cereal and the second portion is adapted to
hold milk.
4. A container as claimed in any preceding claim,
wherein the closure means is a lid hinged to the first
25 portion.
5. A container as claimed in any preceding claim,
wherein the container additionally comprises at least one
item of cutlery.
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6. A container as claimed in claim 5, wherein the at
least one item of cutlery is housed in a cutlery housing
within the container.
- 35 7. A food package including a first container which
is bowl-shaped, a second container located within the
first container and closure means for the first

container, wherein the second container is fixedly
secured to the closure means and releasably frangibly
attached to an inner wall of the first container, whereby
on opening the closure means the second container
5 separates from the inner wall of the first container and
contents of the second container mix with contents of the
first container.

8. A food package as claimed in claim 7, wherein the
10 frangible attachment is to a lower portion of a side wall
or to a base of the first container.

9. A food package as claimed in claim 7 or 8, wherein
the closure means has apertures therein sealable by foil
15 means.

10. A food package as claimed in claim 7, 8 or 9,
wherein the closure means is a lid which is heat sealed
to a rim of the first container and hingedly secured to
20 the first container.

11. A food package as claimed in any of claims 7 to
10, wherein the food package further includes at least
one item of cutlery, e.g. a spoon, releasably attached to
25 a portion of the second container.

12. A food package as claimed in any of claims 7 to
11, wherein the second container is frusto-conically
shaped, or is a truncated cylinder.

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13. A food package as claimed in any of claims 7 to
12, wherein the second container is an inner truncated
cone having a base remote from the closure means
connected by an annulus at the base of the inner cone to
35 an outer truncated cone having a base joined to the
closure means.

14. A food package as claimed in claims 7 to 12,
wherein an end of the second container which is frangibly
secured to the base of the first container has a radially
outwardly extending flange which is heat sealed to the
5 inside of the first container to facilitate said
frangible attachment and to enable easy pouring of the
contents of the second container into the first
container.

10 15. A method of providing a food package, including
the steps of:

- a) providing a first container having a hinged lid
and with a second container fixedly secured inside
said lid,
- 15 b) opening said lid to invert said second container,
- c) at least partially filling said second container,
through an opening in a base thereof, with liquid,
- d) closing said first container onto said lid so that
an inside wall of a base of said first container
20 contacts and closes said opening in the base of
the second container,
- e) frangibly sealing the lid to said first container
and said inside wall of the base of said first
container to said base of the second container,
25 thereby sealing said liquid in said second
container,
- f) inverting the combination formed at step (e) and
at least partially filling the first container
with dried food through at least one aperture in
30 said lid, and
- g) closing said aperture(s) with foil means, whereby
in use the seal between the lid and the first
container is broken and in opening the lid the
seal between the second container and the base of
35 the first container is broken, thereby enabling
the liquid in said second container to mix with
the dried food in said first container.

16. A method of providing a food package including the steps of:

- a) providing a first container having a sealed end and an open end,
- 5 b) at least partially filling the first container with a fluid,
- c) providing an inverted second container having a closed end and an open end,
- 10 d) frangibly sealing the open end of the first container to an inner portion of the second container, thereby sealing the liquid within the first container,
- e) inverting the second container and at least partially filling the second container with an ingredient,
- 15 f) sealing an at least partially removable closure means to the opening of the second container and fixedly securing the base of the first container to the closure means whereby, in use, the closure means may be opened and upon opening the closure means the frangible connection between the first container and the second container is broken so that the fluid from the first container may flow into the ingredient of the first container.

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17. A method as claimed in claim 16, wherein an item of cutlery is releasably secured to the base of the first container prior to attachment of the closure means.

30 18. A container for food substantially as herein described with reference to and as shown in each of the embodiments of the accompanying drawings.

19. A food package substantially as herein described with reference to and as shown in each of the embodiments of the accompanying drawings.

20. A method of providing a food package substantially as herein described with reference to and as shown in the accompanying drawings.



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 Claims searched: 1 to 20

Examiner: Mike Henderson
 Date of search: 18 February 1999

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
 UK CI (Ed.Q): B8D (DSC1)
 Int CI (Ed.6): A47G 19/02 19/03 19/30 A47J 47/02 47/14 B65D 25/08 51/28 81/32
 85/80
 Other: ONLINE:EPODOC

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X,Y	GB 752750	(ANGLADE et al) (Whole disclosure relevant)	X:Cl 1 to 3,7,8 & 12 Y:Cl 5,6 & 11
X,Y	EP 0790190A1	(L'OREAL) (Fig. 4b and Col.6 lines 23-25 particularly relevant)	X:Cl 1 to 3,7 & 8,10 & 12 Y:Cl 5,6 & 11
Y	US 5042712	(DEROSEAU) (Whole disclosure relevant)	5,6 & 11
X,Y	US 4836370	(BOSSHARD) (Figs 1 to 6 and corresponding description particularly relevant)	X:Cl 1 to 3,7 & 8,10 & 12 Y:Cl 5,6 & 11
X,Y	US 3856138	(MAEKAWA et al) (Whole disclosure relevant)	X:Cl 1 to 3,7,8 & 12 Y:Cl 5,6 & 11

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
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